Case 2961

Alcyonidium mytili Dalyell, 1848 (Bryozoa): proposed designation of a replacement neotype

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Abstract. The purpose of this application is to set aside a recently designated neotype of *Alcyonidium mytili* Dalyell, 1848, which is not in accord with the original description or probable type locality, and to replace it with a neotype which meets both these criteria and is of a different species of encrusting bryozoan.

Keywords. Nomenclature; taxonomy; Bryozoa; *Alcyonidium*; *Alcyonidium mytili*.

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1. Encrusting marine bryozoans which have been called *Alcyonidium mytili* Dalyell, 1848 occur in western Europe, the Arctic (Kluge, 1962) and both coasts of North America (Osburn, 1912; O'Donoghue & O'Donoghue, 1926). Much confusion existed over the characters of this nominal species, including the question of whether it is a valid entity (Marcus, 1940). Following studies during the nineteen-fifties and later, however, it has become clear that in western Europe intertidal and shallow-water specimens occurring mainly on rocks, stones and shells are different from better known sympatric material found on intertidal fucoids. An influential but incomplete description of specimens of the former type was given by Prenant & Bobin (1956) using material fom Brittany, France; nothing was included on reproductive biology, although some information was given by Eggleston (1970), based on observations made in British waters. Much recent work on the taxonomically difficult genus *Alcyonidium* Lamouroux, 1813 (type species *Ulva diaphana* Hudson, 1778) has confirmed that the rock- and algal-dwelling forms of so-called '*A. mytili*' are indeed distinct, but has also shown that neither is a single species. Recently d'Hondt & Goyffon (1992) designated a neotype of *A. mytili* from the Golfe du Morbihan, Brittany; however, as outlined below, this neotype and much other material identified as *A. mytili* does not belong to Dalyell's species.

2. The observations made by Dalyell in his *Rare and remarkable animals of Scotland* (vol. 1, 1847; vol. 2, 1848) were discussed in an appreciation (Anon., 1858) of his life by a writer whom we believe to have been John Fleming (see Cadman & Ryland, 1996b). Dalyell (1775–1851) practised law in Edinburgh and had a considerable reputation as an antiquarian, natural historian, musician and linguist. He was lame as a result of an early accident, and virtually all his material came from the marine and estuarine waters of the Firth of Forth near his home in Edinburgh. *Alcyonidium mytili* — 'Mussel Alcyonidium' — was described in 1848 (vol. 2, pp. 36–39, pl. 11) as occurring as thin spots or extensive spreads on the surface of shells.

3. The most tangible character of *A. mytili* noted by Dalyell was that the lophophore comprised 'about 15' tentacles; this is a lower number than found in any other encrusting *Alcyonidium* with which *A. mytili* might be confused (Prenant & Bobin, 1956; Hayward, 1985). This distinctive character has been overlooked by many workers this century. Dalyell studied live *A. mytili* over several weeks during one winter (1848, pp. 37–38), and it is significant that he — noted for his thoroughness — did not describe conspicuous whitish or pink embryo clusters, for these would have been expected in November–December had he been dealing with a larviparous species (see para. 6 below).

4. Dalyell's work had actually been written much earlier than 1847–1848: a dispute with the publishers had delayed it for five years (see Anon., 1858). It is unclear whether, at the time of writing it, Dalyell was aware of Hassall's (1841, p. 484) description of the superficially similar *Sarchochiton* [later *Alcyonidium*] *polyoum* from Dublin Bay in Ireland. From at least the time of Hincks's authoritative *A history of the British marine Polyzoa* (1880) until recent times it remained controversial as to whether *A. polyoum* was different from the *A. mytili* of authors; however, it can be readily distinguished (see Ryland, 1962; Thorpe, Ryland & Beardmore, 1978; d'Hondt & Goyffon, 1992). They also differ in their preferred substrates in that *A. polyoum* is largely restricted to intertidal *Fucus serratus* (see Ryland, 1962).

5. We should remark here that the well-known name *Alcyonidium polyoum* (Hassall, 1841) has been synonymised with *A. gelatinosum* (Linnaeus, 1761 [but not 1767]). *A. gelatinosum* (Linnaeus, 1767), one of the world's best known and most discussed bryozoans, is now (see Thorpe & Winston, 1984; 1986) called *A. diaphanum* (Hudson, 1778) and the name *A. gelatinosum* Linnaeus (with the date 1761) has been transferred to the taxon which was for long, and often is still, called *A. polyoum*. These changes are in accord with the principle of priority but cause considerable confusion.

6. A larviparous form of '*A. mytili*', most recently redescribed by Hayward (1985), has 17–18 tentacles (Hayward gives 17–21), shows pale pink brooded embryos (particularly in winter) and occurs on rocks, shells and crustacean carapaces. A specimen of this, from the Golfe du Morbihan, southern Brittany, has been designated (d'Hondt & Goyffon, 1992, pp. 466, 469) as the neotype of *Alcyonidium mytili*; it is now registered as LBIMM-BRY-19959 in the Muséum d'Histoire Naturelle in Paris. This larviparous *Alcyonidium* is distinct both from *A. gelatinosum* (sensu Linnaeus, 1761, i.e. *A. polyoum*) and *A. mytili* as originally described by Dalyell. The designation does not meet the Code requirement (Article 75d(5)) that a neotype should come from as near as possible to the original type locality. One of us (J.S.R.) has surveyed several shores of the Firth of Forth, Dalyell's locality (para. 3 above), and found that all the material from there is oviparous and has 15–17 tentacles; it is entirely in accordance with the original description, which has been amplified by Cadman & Ryland (1996a, 1996b). We have found that both this species and the larviparous '*A. mytili*' of d'Hondt & Goyffon and others occur sympatrically in our extensively studied areas in south-west Wales.

7. Hincks (1857) introduced *Alcyonidium hexagonum* as a replacement name for *A. mytili* on the grounds that 'The name which he [Dalyell] has assigned is altogether inappropriate, and conveys a false impression, inasmuch as the species is by no means a parasite of the Mussel exclusively...'. Hincks included a description of

A. hexagonum from South Devon, partly taken from an earlier paper (1851), and from this it is clear that he was dealing at least in part not with Dalyell's species but with a larviparous one, quite probably that represented by d'Hondt & Goyffon's specimen. However, since *A. hexagonum* is formally a replacement name for *A. mytili* it cannot be applied to a separate species (Article 67h of the Code).

8. We have proposed (Cadman & Ryland, 1996a) that the inappropriate neotype designation by d'Hondt & Goyffon (1992) for *A. mytili* be set aside and that a specimen of the oviparous species from the Forth be designated. This would make the name *A. mytili* accord both with Dalyell's original description and his type locality. It would also facilitate revision of the genus *Alcyonidium*, and especially of the larviparous species mistaken (e.g. by Prenant & Bobin, 1965 and d'Hondt & Goyffon, 1992) for *A. mytili*. We should point out that the latter may not be a single species since it seems to be equivalent to at least three genetic species (the '*A. mytili* I, II and III' of Thorpe, Ryland & Beardmore, 1978; see also d'Hondt & Goyffon, 1992). We propose as neotype of *A. mytili* Dalyell a specimen collected by J.S.R. from *Mytilus edulis* at Longniddry, East Lothian, Scotland (55°59′ N., 2°53′ W.) in February 1994; it is deposited in the Natural History Museum, London, as specimen BMNH 1994.4.5.1.

9. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary powers to set aside the neotype designation by d'Hondt & Goyffon (1992) for the nominal species *Alcyonidium mytili* Dalyell, 1848 and to designate the specimen proposed in para. 8 above;

(2) to place on the Official List of Specific Names in Zoology the name *mytili* Dalyell, 1848, as published in the binomen *Alcyonidium mytili* and as defined by the neotype designated in (1) above.

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